

(FILE 'HOME' ENTERED AT 06:52:38 ON 25 MAR 2002)

FILE 'USPATFULL' ENTERED AT 06:52:47 ON 25 MAR 2002

L1 595308 S VALUED OR VALUING OR ESTIMAT? OR CALCULAT? OR PRICED OR  
PRICI  
L2 1210255 S PRODUCT# OR ITEM# OR GOODS OR SERVICE# OR MERCHANDISE#  
L3 2123107 S COMPONENT# OR PARAMETER# OR ELEMENT# OR VARIABLE#  
L4 30815 S L1(10A)L2  
L5 79046 S L2(5A)L3  
L6 5816 S L4 AND L5  
L7 8 S DEMAND?(5A)PROBAB?(4A)(VALUE# OR VARIABLE# OR PARAMETER#)  
L8 1 S L6 AND L7  
L9 5021 S DEMAND?(5A)(VALUE# OR VARIABLE# OR PARAMETER#)  
L10 124 S L6 AND L9  
L11 31 S PRORAT?(5A)(VALUE# OR VARIABLE# OR PARAMETER#)  
L12 1 S L10 AND L11  
L13 56389 S TIME AND PRICE#  
L14 12502 S REVENUE# OR PROFIT#  
L15 1725 S L14(5A)L2  
L16 0 S L15 AND L13 AND L7  
L17 0 S L16 AND L13 AND L9  
L18 75549 S PRICE#

File 347:JAPIO Oct/1976-2001/Nov(Updated 020305)

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**\*File 347: JAPIO data problems with year 2000 records are now fixed.**

Alerts have been run. See HELP NEWS 347 for details.

File 348:EUROPEAN PATENTS 1978-2002/MAR W03

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File 349:PCT FULLTEXT 1983-2002/UB=20020321,UT=20020314

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Set	Items	Description
S1	1838822	PRODUCT? OR ITEM? OR GOODS OR SERVICE? OR MERCHANDISE?
S2	609127	VALUED OR VALUING OR ESTIMAT? OR OPTIMIZ? OR CALCULAT? OR - PRICE? OR PRICING
S3	3097	DEMAND? (4N) (VARIABLE? OR PRICE? OR VALUE? OR PARAMETER?)
S4	86676	S1(S)S2
S5	3097	S3 AND S3
S6	13	PRORAT? (5N) (VALUE? OR PARAMETER? OR VARIABLE?)
S7	3	S5 AND S6

?t s7/3,k/all

7/3,K/1 (Item 1 from file: 349)  
DIALOG(R)File 349:PCT FULLTEXT  
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00542296 \*\*Image available\*\*

COMPUTER-IMPLEMENTED VALUE MANAGEMENT TOOL FOR AN ASSET INTENSIVE  
MANUFACTURER

OUTIL DE GESTION DE VALEURS INFORMATISE POUR FABRICANT DE PRODUITS A FORTE  
CONCENTRATION D'ACTIFS

Patent Applicant/Assignee:

I2 TECHNOLOGIES INC,

KALYAN Vibhu K,

Inventor(s):

KALYAN Vibhu K,

Patent and Priority Information (Country, Number, Date):

Patent: WO 200005669 A1 20000203 (WO 0005669)

Application: WO 99US16454 19990722 (PCT/WO US9916454)

Priority Application: US 9893709 19980722

Designated States: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE

DE DK EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR

KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI

SK SL TJ TM TR TT UA UG UZ VN YU ZA ZW GH GM KE LS MW SD SL SZ UG ZW

AM AZ BY KG KZ MD RU TJ TM AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC

NL PT SE BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG

Publication Language: English

Fulltext Word Count: 4020

Fulltext Availability:

Detailed Description

Claims

Detailed Description

... A probabilistic demand function is used to represent  
expected demand for each product. Given these **values** and  
the **demand** function, a **value** equation is formulated for  
each resource. Each value equation is expressed as a  
lagrangian equation...

...management for asset intensive manufacturing is  
based on the following principle: Based on future  
uncertain **demand** for various products, expected **prices** for  
those products, and available capacities of resources  
during periods required to supply **demand** when **demanded** , a  
**value** for each resource during those periods can be  
calculated. The calculation results in threshold prices,  
referred to as minimum acceptable **values** (MAVs) for a given  
**demand** period.

For an asset intensive manufacturer, the MAV of a  
resource monotonically decreases with increase...

...tn) for which MAVs are to be computed. These intervals may  
represent seasons in which **demands** and/or **prices** for  
products are significantly different from those in other  
time intervals, even though the products...vjkiuji

I klui))I)uj Ti

jFSP /ESR

*Applicant*

(8)

The following expression represents the total **prorated value** of product j on resource i.

T

$v_{j@j0 @'Uj} = V_{ii}$

Using **prorated values**, Equation (8) can be rewritten as.

$(G-1[k jUj / V_{jiT}Uj T,$   
i i...

...sp jrsrc

I I (10)

I iT

V =V /Uj

where i J ' is the **prorated value** (per unit of capacity) of product j on resource i.

Even if a product has...

...per unit of

product, if it has a high usage of a resource then its **prorated value** (per unit capacity of resource) on the resource is reduced. Thus, the system of equations can be solved iteratively by assuming some initial X's, **prorating** the **value** of each product used by a resource and solving for the new X until all...the value of resources used to make the products? value (profit) is calculated from cost, **price**, and yield.

Probabilistic **demand** may be modeled in various ways.

An example of a demand distribution is a truncated...

...x) = xQ(x) - 1/(2rie-"/2)"

Each equation is now written in terms of one **variable** using **prorated** product prices. The **prorated value** of a product i on resource j may be expressed as.

$V_{j3} = V_j x_i X_j U_{ji}...$

...system of equations is solved

3 0 iteratively by assuming initial XI s (Step 41), **prorating** the **value** of each product used by a resource (Step 42), and solving for a new X...computer implemented pricing tool 94 or demand forecasting tool 95 may be used to provide **price** and **demand** data, respectively.

Once known, MAVs can be used with other control variables, such as ATP...

Claim

... based on a truncated normal distribution.

3 The method of Claim 1, wherein said profit **values** are **prorated** for each product on each resource.

4 The method of Claim 1, further comprising the...

...of generating a revenue function for each product based on said allocation value, said profit **value**, and said **demand** function, and of solving said revenue function for expected revenue of said product.

5 The...

...10, wherein said valuation

engine further calculates expected revenue, using the allocation values, the profit **values** , and the **demand** function.

14 The system of Claim 10, further comprising a scheduling engine for generating manufacturing...

7/3,K/2 (Item 2 from file: 349)  
DIALOG(R) File 349:PCT FULLTEXT  
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00494816 \*\*Image available\*\*

**COMPUTER-IMPLEMENTED PRODUCT VALUATION TOOL**  
**OUTIL INFORMATIQUE D'ESTIMATION DE PRODUITS**

Patent Applicant/Assignee:

I2 TECHNOLOGIES INC,

Inventor(s):

KALYAN Vibhu K,

*Applicant*

Patent and Priority Information (Country, Number, Date):

Patent: WO 9926168 A2 19990527

Application: WO 98US24977 19981119 (PCT/WO US9824977)

Priority Application: US 9766133 19971119; US 9766134 19971119; US 9766136 19971119

Designated States: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES  
FI GB GD GE GH GM HR HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV  
MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG  
UZ VN YU ZW GH GM KE LS MW SD SZ UG ZW AM AZ BY KG KZ MD RU TJ TM AT BE  
CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM GA GN  
GW ML MR NE SN TD TG

Publication Language: English

Fulltext Word Count: 8477

Fulltext Availability:

Detailed Description

Claims

Detailed Description

... tools,, and more particularly to a computer-implemented method of calculating product values, with the **values** varying in accordance with **demand** forecasts, as well as lead times and delivery times when appropriate.

BACKGROUND OF THE INVENTION...

...non

standard or standard, depending on the particular combination of components. Products having a known **price** are considered standard products. **Demand** probability **values** are assigned to each of the products. A component value is obtained for each component...

...steps: (a) assuming a beginning value for each component; (b) for a first component, calculating **prorated values** , such that for products using that component,.. a **prorated value** is calculated on that component by calculating the difference between the product price and a value of the product's other components; (c) calculating a component **value** as a function of the **prorated values** and the **demand** probability **values** ; (d) repeating steps (b) and (c) for all components; (e) determining whether the component values...

...that it provides a method of pricing product options in a manner that considers probabilistic **demand** . **Prices** can be set so as to accommodate the opportunity cost of critical components.

Non-standard invention.

FIGURES 2A and 2B illustrate how component **values** , , product **prices** , and product **demand** probabilities can be graphically represented in three dimensions.

FIGURE 3 represents the pricing process in...  
...a function of order size, Q, and lead time, LT, respectively.

FIGURE 9 illustrates a **price - demand** curve for a product, and compares maximum revenue at a single price to total potential...

...Product Pricing

Value management may be used as a pricing solution that balances supply with **demand** . As explained below, the **prices** of components that make up a product are determined based on probabilistic demand and available...law on the inputs that consist of, in addition to others, available supply and **demand** , , while " **price** " is used as an independent variable to determine value. At times the two terms may...13 is selecting a first component, such that  $c = 1$ .

Step 14 involves calculating a **value** , w. that represents the **prorated value** of a product on a component.

Given a price p for a standard product, a vector V of component values, and its CS given by S, , its **prorated value** , w. on a component c (belongs to its CUS), is.

$W (P - E C) i \dots$

...where Q, is consume per for the product for component c.

A property of this **proration** is that if for converged **values** of V. w is greater than V, , , then it follows that.

$P > E V,$   
ies...121 {11  
The available supply of each component is 1. 012 is the probability that **demand** for product 1 ( **price** P1) arrives before that of product 2. 021 is the probability that demand for product...

...initial estimate of component values is V11 and V21. Set k and r to 1.

**Prorated values** on component 1 from each product using it are calculated as.  
Product Prorated on Component...

...1  
 $p2) * p1 * P11)$   
The new value for component 1 is.

$V1k = \text{MAX}(MV1, MV2)$   
**Prorated values** on component 2 are calculated as.

Product Prorated on Component 2  
1 P12 = P1 - V1k...

...values V1 and V2) of the calculations above for various input values (P1 and P2 **prices** and **demand** probabilities).

Due to a convergence criterion of 0.5. the values have a

precision of...which demand distributions and other inputs are specified.

FIGURES 2A. and 2B illustrate how component **values**, product **prices**, and product **demand** probabilities can be graphically represented in three dimensions. A component values is identified as a...

...acceptable value) as calculated above. FIGURE 2A illustrates the MAV for component 1 and the **price** and **demand** probability for product 2; FIGURE 2B illustrates the data for component 2.

For purposes of...

...only, and may be prices that a business is already comfortable with or obtained from **price - demand** curves. As explained above, these prices are used to arrive at component values, which in turn can be used to price NSPs based on supply and **demand**. The component **values** represent a mapping of forecasted SP **demand** (with uncertainty) and SP **prices** on a limited supply of components. In fact, if SPs were repriced based...

...values, the result would be a lower value since the average revenue for a probabilistic **demand** for a fixed **price** is less than the price. However, when selling an NSP, it should be determined how much revenue is being displaced that could have been made at the SP **prices** and probabilistic **demand**. Also, when using the component values to negotiate prices, the pricing process may consider factors...all horizons; generalization to volume orders (similar to group bookings for airlines); and inclusion of **demand** and/or **price** curves for products instead of a static value.

FIGURE 3 illustrates the pricing process in...FIGURE 11 it was shown how, given an available supply of constrained materials, and probabilistic **demand** of SPs and their **prices**, the values of the critical components can be computed.

The component values (MAVs) calculated in...

...3\*standard deviation, which covers, for a normal distribution, close to 99.99% of possible **demand values**.

The curve of FIGURE 4 illustrates how MAV varies as a function of supply of...value management (VM). As explained above, a basic idea behind VM is components can be **valued** in terms of probabilistic **demand**. These **values** can be used to define products that provide greater value and to arrive at a...

...product control policy can be significant gains in profit margins.

FIGURE 9 illustrates a linear **price - demand** curve for a product, P. As explained below, when only a single price is to...information, the single price at which total revenue is maximum can be determined. If any (**price**, **demand**) pair on the curve is chosen as (r,d), the total revenue, R, is.

R...

...50 = \$40,000.

However, the total revenue "potential" (one that would result from charging different **prices** for different **demands**) is  $100 \times 1600 / 2 = \$80,000$ . Thus, a single price that maximizes revenue (\$ 8 00...and materials), and without product control, the MTO may end up not realizing higher paying **demand** if **demand** at lower **prices** is high and comes first.

Assume that the process of product design yields the following...

...P P (1 week delivery) 1100

P P (3 week delivery) 800

Based on a **price - demand** curve such as that of FIGURE 9.

**demand values** can be assigned as single deterministic numbers. But in reality, demands are stochastic and are better characterized by a probability distribution. A better approach is to assign **demand values** for different "buckets" of prices. To this end and as a simple example, assume that...

...demand of 1 may not materialize. The demand probability table looks like.

Probability

of the **demand**

Product **Price Demand** materializincr

P1(1 day delivery) 1200 1 .5

P2(1 week delivery) 1100 1 .5...positive impact on revenue and profit.

First, analyze

underlying demand to obtain a relationship between **price** charged and **demand**. The result is a product design (PD) scheme. Design history databases for help in demand...

Claim

... a set of products from said components;  
assigning a price to each said product;  
assigning **demand probability values**, such that a probability value is associated with each of said products;  
calculating component values...

...a beginning

value for each of said components; (b) for a first said component, calculating **prorated values**, such that for products using that component, a **prorated value** is calculated on that component by calculating the difference between the product price and a value of the product's other components; (c) calculating a component **value** as a function of said **prorated values** and said probability **values**; (d) repeating steps (b) and (c) for all said components; (e) determining whether said component...

...2 The method of Claim 1, wherein step (d) is performed by multiplying a probability **values** times **prorated values**.  
The method of Claim 1f wherein step (d) is performed by obtaining a sum of products of probability **values** and **prorated values**.

4 The method of Claim 1, wherein said probability values include both the probability offer for a first said component, calculating **prorated values**, such that for each product using that component,, a **prorated value** is calculated on that component by calculating the difference between the product price and a value of the



product's other components; (c) calculating a component value as a function of said prorated values and said probability values; (d) repeating steps (b) and (c) for all said components; (e) determining whether said component...

...the steps of:

designing a set of products, each having an associated delivery time and price;  
assigning a demand probability value to each of said products;  
calculating an expected revenue from said products for at least two available capacities, said expected revenue being a function of said demand probability values and said prices;  
calculating an asking price for each of said products as the difference between its expected...

...having one or more components; and  
means for calculating values of said products by assigning demand probability values, such that a probability value is associated with each of said products; then by calculating...

...a beginning

value for each of said components; (b) for a first said component, calculating prorated values, such that for each product using that component, a prorated value is calculated on that component by calculating the difference between the product price and a value of the product's other components; (c) calculating a component value as a function of said prorated values and said probability values; (d) repeating steps (b) and (c) for all said components; (e) determining whether

7/3,K/3 (Item 3 from file: 349)  
DIALOG(R)File 349:PCT FULLTEXT  
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00215275 \*\*Image available\*\*

**COMPUTERIZED AIRLINE SEAT INVENTORY CONTROL SYSTEM**  
**RESEAU INFORMATIQUE DE CONTROLE D'INVENTAIRE DE PLACES SUR UNE LIGNE AERIENNE**

Patent Applicant/Assignee:

ANDERSEN CONSULTING,

Inventor(s):

HORNICK Scot W,

Patent and Priority Information (Country, Number, Date):

Patent: WO 9212492 A2 19920723

Application: WO 92US91 19920110 (PCT/WO US9200091)

Priority Application: US 9177 19910111

Designated States: AT BE CA CH DE DK ES FR GB GR IT JP LU MC NL SE

Publication Language: English

Fulltext Word Count: 14568

Fulltext Availability:

Detailed Description

Detailed Description

... the

implementation of three embodiments of the airline seat inventory control is described.

Method Optimal Demand Number Of  
Basis Characteristics Variables  
Leg-based EMSR Leg Stochastic Small  
Virtual-Nesting EMSR Leg Stochastic Small

Deterministic LP Network...INIT routine initializes the global variables of the program, and calculates the starting LAMBDA (LEG) values using a leg-based mileage- **prorated** EMSR method.

After the INIT routine starts, a first loop is executed once for each...

...routine initializes mileage prorated virtual fares to provide suitable initial EMSR's.

The CONSTRUCT MILE **PRORATED** FARES routine has as its **parameter** the desired LEG in the network. After the routine starts, all previous buckets are de...

...once for all paths, i.e., ITIN's, in the network containing the LEG, The **PRORATION** value is calculated by dividing the miles on the LEG by the miles for the ITIN...

...LAMBDA@OFFSET is set to zero, TRUE-FARE and VIRT-FARE are set to the value of.

(FARE(ITIN-F)) ( **PRORATION** )  
LAMBDA-OFFSET is set to the value of.

(VZRT-FAP-E)12(ezfc((-MEAN(ITIN...routine initializes mileage prorated virtual fares to provide suitable initial EMSR's.

The CONSTRUCT MILE **PRORATED** FARES routine has as its **parameter** the desired LEG in the network, After the routine starts, all previous buckets are de...

...once for all paths, i.e., ITIN's, in the network containing the LEG, The **PRORATION** value is calculated by dividing the miles on the LEG by the miles for the ITIN...

...are all greater than zero, then TRUE-FARE and VIRT-FARE are set to the value of.

(FARE(ITIN-F)) ( **PRORATION** )  
A new element is created, LAMBDA-OFFSET, MEAN(ITIN@F), STDDEV(ITIN-F), TRUE-FAREp...

...initializes mileage prorated virtual Z fares to provide suitable initial EMSR's.

The CONSTRUCT MILE **PRORATED** FARES routine has as its **parameter** the desired LEG in the network. After +Che routine starts, all previous buckets are de...

...once for all paths, i.e., ITIN's, in the network containing the LEG. The **PRORATION** value is calculated by dividing the miles on the LEG by the miles 5 for the...

...are all greater than zero, then TRUE-FARE and VIRT-FARE are set to the value of.

(FARE(ITIN-F)) ( **PRORATION** )  
A new element is created, LAMBDA@OFFSET, XEAN(ITIN@F)j STDDEV(ITIN-F), TRUE...is the maximum LAMBDA value, i.e., EMSR, for which the bucket gets seats.

This value is required for those demand models, e.g., the Gaussian demand model, that anomalously assign

non,-,zero probability to negative...

...e.g., the incomplete gamma distribution, that  
do not assign non,,,zero probability to negative **demand**  
will not use this **value** , e.g., ELEMENT.LAMBDA-OFFSET  
ELEMENT\*VIRT-FARE\*  
ho ELEMENT,LAMBDA-OTHER is the summation...in the Nested  
EMSR-Differential  
Virtual Fare Method. This routine is called with a LEG  
**parameter** and constructs EMSR- **prorated** fares for each  
bucket element. For each itinerary using the leg, the  
ELEMENT,LAMBDA-OTHER...

?

File 15:ABI/Inform(R) 1971-2002/Mar 21  
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File 610:Business Wire 1999-2002/Mar 25  
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**\*File 610: File 610 now contains data from 3/99 forward.**  
Archive data (1986-2/99) is available in File 810.

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File 275:Gale Group Computer DB(TM) 1983-2002/Mar 22  
(c) 2002 The Gale Group

File 476:Financial Times Fulltext 1982-2002/Mar 25  
(c) 2002 Financial Times Ltd

File 624:McGraw-Hill Publications 1985-2002/Mar 25  
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22/3,K/1 (Item 1 from file: 15)  
DIALOG(R)File 15:ABI/Inform(R)  
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**Oil production in the lower 48 states: Economic, geological, and institutional determinants**

Kaufmann, Robert K; J, Cutler  
Energy Journal v22n1 PP: 27-49 2001  
ISSN: 0195-6574 JRNL CODE: ENJ  
WORD COUNT: 6171

...ABSTRACT: error correction model for oil production in the lower 48 states that specifies real oil **prices**, average production costs, and prorationing by the Texas Railroad Commission. These modifications enable a model...

... result that oil production in the lower 48 states shares stochastic trends with real oil **prices**, average production costs, and prorationing indicates that accuracy of Hubbert's bell shaped curve is...

...TEXT: error correction model for oil production in the lower 48 states that specifies real oil **prices**, average production costs, and prorationing by the Texas Railroad Commission. These modifications enable us to...

... result that oil production in the lower 48 states shares stochastic trends with real oil **prices**, average production costs, and prorationing indicates that accuracy of Hubbert's bell shaped curve is...

... the lower 48 states. This inability is critical. The negative economic effects associated with high **prices** and energy shortages imply that the importance of inconsistencies with the basic Hotelling model identified...

...than is currently envisioned by most policy makers.

INTRODUCTION

The recent increase in real oil **prices** has generated concern about supply. Mirroring the debates of the 1960s and 1970s, attention is...

... This model is derived from economic first principles and is used to describe dynamically consistent **price** and production paths that maximize the total social welfare (present value) of a nonrenewable resource...

... finite availability of nonrenewable resources does not adequately explain the observed behavior of nonrenewable resource **prices** and in situ values (Krautkraemer, 1998). To overcome these difficulties, researchers have modified the basic...

... of possible outcomes makes it difficult, if not impossible, to make any general predictions about ... **price** and extraction paths (Krautkraemer, 1998)."

A second approach is the so-called Hubbert curve, named...

... the first difference of the logistic curve, which traces a symmetric bell-shaped curve over **time**. The Hubbert curve and its variants are popular because they have been used to generate...

...relax the assumption that oil producers operate in a competitive market, our model includes a **variable** that represents **prorationing** decisions by the Texas Railroad Commission. To relax the assumption that firms rank and produce...

... a variable that represents the average cost of production. To relax the assumption of perfect **price** reversibility, our model specifies **price** in a way that differentiates the supply effects of **price** increases from **price** decreases. These modifications enable us to generate a model that

accounts for most of the...

... a model for oil production in the lower 48 states that specifies real wellhead oil **prices**, average production costs, and prorationing by the Texas Railroad Commission as explanatory variables. Augmented Dickey...

... can be removed only after the data are differenced once (or perhaps twice for the **prorationing variable**). Such nonstationary data are said to be integrated order 1, or  $I(1)$ . This property... regressions.

To differentiate between spurious and meaningful regressions, a large part of the recent econometric **time** series literature deals with estimation and inference in the presence of  $I(1)$  variables. Engle...

... 48 states (Prod), the average real cost of oil production (Cost), real well head oil **prices** (P

sub oil  
) , and the fraction of capacity allowed to operate by the Texas Railroad...

...cost.

Previous studies of the oil industry hint at an asymmetric relation between real oil **prices** and production (Frankel, 1946). To evaluate this possibility, we use the method developed by Gately (1992) to decompose the real **price** data into three series. One series is the maximum real **price** of oil between 1936 and any given date (P

sub max

). This series increases monotonically because P

sub max

remains at the previous all- **time** high when real **prices** fall below this maximum (Figure 1). Real **prices** often decline following a new all- **time** high. Such declines are termed **price** cuts. These **price** cuts are accumulated to form a second series that decreases monotonically, which is termed P

sub cut

. Following such declines, real **prices** may rise towards, but not exceed, the previous maximum. These **price** recoveries are accumulated to form a third series that increases monotonically, which is termed P...

...The sum of P

sub max

, P

sub cut

, and P

sub rec

at any **time** is the real **price** of oil.

We also include a variable (Ration) that represents the fraction of capacity allowed...

...Adelman (1964) was among the first to qualitatively describe the effects of the TRC on **prices**, costs, and production. This relationship is quantified by Kaufmann (1991) and confirmed by Pesaran and...

... between 1935 and 1973 to damp the boom and bust cycle in oil production and **prices** (Prindle, 1981). By the early 1960's, the TRC allowed owners

to operate their wells...

... can be used to generate equations for all of the endogenous variables, which include oil **prices**, real costs of production, and prorating decisions by the TRC. Such an effort is beyond...

... of this analysis, given the lack of a satisfactory theoretical (or empirical) model for oil **prices**.

Without satisfactory equations for the endogenous variables other than production in the lower 48 states...identified from the full system.

Figure 1.

Table 2.

### III. RESULTS

The inclusion of a **time** trend and/or constant in the cointegrating (equation 3) is chosen using a method developed...

... a rank test statistic to compare models that include/exclude a constant and/or a **time** trend in cointegration space and assumes various numbers of cointegrating relations. Using this method, we chose a model that includes a **time** trend in cointegration space (and three cointegrating vectors, which is consistent with the result described...

...use a mechanistic process to identify the most parsimonious model of the relation among oil **prices**, the decomposed **price** series, average cost of production, and pro-rationing decisions by the TRC. Instead, we use...

... similar. In these models, CR #1 can be interpreted as the long run relation between **price** and the rate of oil production. This interpretation is consistent with the sign and statistical results indicate that production increases as the real **price** of oil: (1) rises to an all-**time** high; (2) recovers back towards that high; or (3) that production declines as oil **prices** fall way from a previous high. CR #1 in models 2 - 4 include every possible...

...P

sub max

, P

sub cut

, and P

sub rec

, indicate that the relation between **price** and production is asymmetric, but that the nature of the asymmetry is uncertain.

Table 3...

... a self-correcting effect on production in the long run. For example, an increase in **price** reduces the value of CR #1. This reduction has a positive effect on production because...

...This slow rate of adjustment is consistent with the 3-4 year lag between oil **price** increases and increased exploratory drilling (Byrd et al., 1985) and the decade long lag between...

... third cointegrating relation (CR #3) can be interpreted as the long run relation between the **price** of oil and the average cost of production. As the real **price** of oil increases, **profit** increases, which attracts investment to the industry. At the margin, increased investment forces firms to develop lower quality deposits, which increases average costs. The

**price** asymmetry in CR #3 is clear. **Price** recoveries have a greater effect on average cost than **price** cuts and **price** increases to an all-**time** high. **Price** increases to new all-**time** highs spur innovations that allow the industry to recover oil from fields which were previously uneconomic. Subsequent **price** reductions spur innovations that reduce the cost of the new technology. **Price** recoveries rarely spur technical innovation, but they do spur efforts to increase production. This latter effect, without the former, tends to increase costs more rapidly than other **price** changes.

Production is not included in CR #3 (the restriction that eliminates production from CR economic **profit** does not affect production. For model 4,  $\alpha$  (overscored)  
sub 13

is statistically significant and...

... from models 1 - 4 are replaced with a cointegrating relation that includes Cost and the **time** trend (model 5). Although the set of restrictions associated with model 5 are less restrictive...

...associated with P

sub rec

and P

sub cut

is the least restrictive form of **price** asymmetry (model 6). Nonetheless, we cannot reject alternative sets of restrictions that equalize two elements of beta associated with the decomposed **price** series. Relative to model 6, we reject model 9, which postulates a symmetric relation between **prices** and production (chi  
sup 2

(1) = 4.25,  $p < 0.04$ ). We cannot reject a...

...1 & CR #2 in models 2 - 4. As in models 2 - 4, the relation between **price** and production is asymmetric. In model 10, **price** increases (P

sub max

, P

sub rec

) have a greater effect on production than **price** reductions. Increases in average cost have a negative effect on production. Shutting in production by...

... indicates that oil production in the lower 48 states shares stochastic trends with the decomposed **price** series, average costs, and prorating decisions by the TRC. These stochastic trends are not present real oil **prices**, average real cost of production, and decisions by the TRC co-evolved in a way that traced what appears to be a symmetric bell-shaped curve for production over **time**. A different evolutionary path for any of these variables could have produced a pattern of...

... system and the partial system have a cointegrating relation that specifies an asymmetric relation between **prices** and production. The lack of perfect **price** reversibility implies that there may be no unique or optimal path for **price** to follow towards the choke **price**, and if there is, it may not increase monotonically. Finally, both the full and the...

...market will generate a smooth transition from oil. The negative economic effects associated with high **prices** and energy shortages imply that the



importance of inconsistencies with the basic Hotelling model identified...

...Dickey, D.A. and W.A. Fuller (1979). "Distribution of the estimators for auto regressive **time** series with a unit root." Journal of American Statistics Association 7: 427-431.

Enders, W. (1995). Applied Econometric **Time** Series. New York, NY: John Wiley.

Engle, R.E. and C.W.J. Granger (1987...

...Frankel, P.H. (1946). Essentials of Petroleum. London, UK: Frank Cass.

Gately, D. (1992). "Imperfect **price** -reversibility of U.S. gasoline **demand** : Asymmetric responses to **price** increases and declines." The Energy Journal 13(4): 179-207.

Granger, C.W.J. and...

... of cointegrated systems in small samples: practical procedures with an application to UK wages and **prices** ." London Business School, Mimeo.

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Pantula, S.G. (1989). "Testing for unit roots in **time** series data." Econometric Theory 5: 256-271. Pearce, D.W. and R.K. Turner (1990...

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30/3,K/2 (Item 2 from file: 15)  
DIALOG(R)File 15:ABI/Inform(R)  
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01912238 05-63230

**Heat stress and strain in an aluminum smelter**

Logan, Perry W; Bernard, Thomas E  
American Industrial Hygiene Association Journal v60n5 PP: 659-665  
Sep/Oct 1999  
ISSN: 0002-8894 JRNL CODE: AIH  
WORD COUNT: 6070

...TEXT: time spent in the various locations. For crust breaking, jacking bridges, and anode setting, the **values** were **prorated** against the number of pots included in the sample.

The NIOSH/American Conference of Governmental...

... ACGIH threshold limit values (TLVs(R)).(2) The environmental conditions at each work location were **estimated** from the ambient conditions from the local National Weather **Service** station. Other important data were the number of pots that were set, the number of...was below 110 bpm, then thermal balance was likely and there was no excessive physiological **demand**.(8,10-12) The average **values** for crust breaking, jacking, and setting were around 125 bpm, with the 95th percentile above...

30/3,K/3 (Item 3 from file: 15)  
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00642700 92-57640

**1992 Gas Utility Executives' Forum: Retail Gas Pricing**

Anonymous  
Public Utilities Fortnightly v130n7 PP: 49-66 Oct 1, 1992  
ISSN: 0033-3808 JRNL CODE: PUF  
WORD COUNT: 11096

ABSTRACT: At the 1992 Gas Utility Executives' Forum, the issue of retail gas **pricing** was addressed. Daniel A. Bollom of Wisconsin Public **Service** Corp. said the claims by a few suppliers that retail gas prices are too high...

... prices to wellhead prices and the general level of retail prices. He said for the **services** rendered, gas prices are not too high. Stanley J. Bright of Iowa-Illinois Gas & Electric...

...costs that must be reflected in the burnertip price. Charles E. Zeigler, Jr., of Public **Service** Co. of North Carolina Inc. said his firm believes that retail natural gas prices are...

... appropriately. This is supported by the fact that there is such strong demand for the **product** and **service** in the retail natural gas market, and these natural gas rates must stand the scrutiny...

...TEXT: percent for net income.

Yankee Gas is extremely sensitive to the marketability of our energy **service**. We are acutely aware that on every market front we are faced with stiff competition, not only in **pricing**, but in reliability and security issues as well. Rep. Tauzin is partially correct, but he uses the wrong preposition when referring to the total cost of **service**. "It's a problem (for) local distribution companies." We must constantly find ways of improving... customers equally, reflecting some form of "cookie cutter economics?" Absolutely NOT! In recent years, utility **pricing** concepts have moved from cross-subsidized rate structures to those that reflect a sensitivity to...

... cost causation. The natural gas industry of today is moving closer to the market-based **pricing** policies used in other industries, whether they be the airlines, long-distance telephone carriers, or...

... of special interest groups who are no longer protected by historical subsidies, and price our **services** or **products** based on market value.

As an aside to this issue, we as an industry don't...LDC customers, employees, and shareholders; recognize that if customers leave an LDC and the universal **service** obligation is not removed, overhead costs must shift to remaining customers; recognize that if tiered **pricing** is implemented some social agency must qualify customers and the overhead charges must shift to...facts:

\* Natural gas prices have risen in concert with both implemented and announced changes in **prorationing** practices.

\* Most LDC **prices** have dropped over the last several years as the price of natural gas has dropped...to survey any group of consumers to determine the three most important characteristics of a **product**, received wisdom suggests that they would respond: (1) price, (2) price, and (3) price. Residential...

... costs as a means to maximize sales. LDC support for the deregulation of natural gas **pricing** and development of a natural gas commodities market has been largely driven by the demands...categories, because of an effort by Congress to ameliorate a price rise through rolled-in **pricing**, actually supported for a while a much higher section 107 deregulated interstate gas **price**. However, as the largely unmet **demand** in the historic interstate market was met, along with better **production** technology and a dampening of the economy, prices began to fall. In fact, as a...

... not characteristic of natural gas prices. I'm not, however, pointing a finger at wellhead **pricing**. Legislators and other decision makers universally need to realize that end users generally are billed for **services** composed of a number of components:

\* Totally deregulated wellhead prices,

\* Partially deregulated transmission costs, and...customers. In addition, the NGPA imposed the uncomfortable obligation of explanation on the LDCs--customers **demand**ed to know why natural gas **prices** were rising so rapidly. Even though the enhanced prices were not increasing LDC profitability, consumers...

... conservation programs as a reaction to higher prices, which further exacerbated the problem by decreasing **demand**. But the higher **prices** were successful in spurring production and the industry found itself with an excess supply of... of natural gas prices. It will be interesting to watch the future impact of market **pricing** on this **product**.

CHARLES E. ZEIGLER JR. President and CEO Public Service Co. of North Carolina, Inc.

We... quoted are driven by emotion and a lack of understanding, rather than facts. The retail **pricing** of natural gas is derived to a great extent by labor and facilities costs, versus...

... natural gas costs. This is because the local distribution company (LDC) business is more a **service** business, as opposed to a commodity business. An LDC must be prepared to offer reliable firm **service** on the coldest day of the year to residential customers regardless of freezeoffs or other...

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49/3,K/1 (Item 1 from file: 148)  
DIALOG(R)File 148:Gale Group Trade & Industry DB  
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13090686 SUPPLIER NUMBER: 70204247 (USE FORMAT 7 OR 9 FOR FULL TEXT)  
**Oil Production in the Lower 48 States: Economic, Geological, and  
Institutional Determinants.(Statistical Data Included)**  
Kaufmann, Robert K.; Cleveland, Cutler J.  
Energy Journal, 22, 1, 27  
Jan, 2001  
DOCUMENT TYPE: Statistical Data Included ISSN: 0195-6574  
LANGUAGE: English RECORD TYPE: Fulltext  
WORD COUNT: 7973 LINE COUNT: 00830

... production in the lower 48 states that represents its economic, physical, and institutional determinants. We **estimate** a vector error correction model for oil production in the lower 48 states that specifies real oil **prices**, average **production costs**, and prorating by the Texas Railroad Commission. These modifications enable us to generate a model...

...result that oil production in the lower 48 states shares stochastic trends with real oil **prices**, average **production costs**, and prorating indicates that accuracy of Hubbert's bell shaped curve is fortuitous. The importance...

...relax the assumption that oil producers operate in a competitive market, our model includes a **variable** that represents **prorating** decisions by the Texas Railroad Commission. To relax the assumption that firms rank and produce...

...fields in order of increasing cost, our model includes a variable that represents the average **cost** of **production**. To relax the assumption of perfect price reversibility, our model specifies price in a way...

...a model for oil production in the lower 48 states that specifies real wellhead oil **prices**, average **production costs**, and prorating by the Texas Railroad Commission as explanatory variables. Augmented Dickey Fuller (ADF) tests...

...can be removed only after the data are differenced once (or perhaps twice for the **prorating variable**). Such nonstationary data are said to be integrated order 1, or I(1). This property is critical to the choice of technique used to **estimate** the model. Granger and Newbold (1974) find that the diagnostic statistics generated by ordinary least...estimate the relation among oil production in the lower 48 states (Prod), the average real **cost** of oil **production** (**Cost**), real well head oil **prices** ((P.sub.oil)), and the fraction of capacity allowed to operate by the Texas Railroad...

...between 1938 and 1991. The sample period is determined the availability of data used to **calculate** average cost, which are not available before 1936 or after 1991 (Cleveland, 1991). This variable...can be used to generate equations for all of the endogenous variables, which include oil **prices**, real **costs** of **production**, and prorating decisions by the TRC. Such an effort is beyond the scope of this...

...a satisfactory theoretical (or empirical) model for oil prices.

Without satisfactory equations for the endogenous **variables** other than **production** in the lower 48 states, the error terms for the VECM are likely to be...

...the estimates. This problem can be avoided by estimating a partial system, in which the **variables** other than **production** are assumed to be exogenous a priori. But estimating a partial system would allow for...can be interpreted as the long run relation between prorating and the average cost of **production**. The **elements** of (beta) associated with Ration and Cost indicate that the fraction of capacity allowed to...

...Nonetheless, disequilibrium in CR #2 has a statistically significant effect on the annual change in **production**. The **element** of (alpha) associated with CR #2 and the annual change in oil production ((alpha).sub...relation in model 10 have the same sign and the same long run effect on **production** as the **variables** in CR #1 & CR #2 in models 2 - 4. As in models 2 - 4, the relation between **price** and **production** is asymmetric. In model 10, **price** increases ((P.sub.max), (P.sub.rec)) have a greater effect on **production** than **price** reductions. Increases in average **cost** have a negative effect on **production**. Shutting in production by the TRC has a positive long run effect on production (via...

...in the long run and the magnitude of this effect is similar to the results **estimated** for the full system. Together, these results indicate that the inefficiency of the **estimation** procedure associated with the structure of the error term for the full system and that...Hubbert model. Our results indicate that Hubbert was able to predict the peak in US **production** accurately because real oil **prices**, average real **cost** of **production**, and decisions by the TRC co-evolved in a way that traced what appears to...

...different from a bell-shaped curve. For example, if the TRC did not shut in **production**, or did not favor high **cost** producers, **production** may not have followed a bell-shaped curve for production and production may not have...

...system and the partial system have a cointegrating relation that includes the average cost of **production**. This **variable** does not increase monotonically as assumed by the basic Hotelling model. Similarly, both the full...

...Frankel, P.H. (1946). Essentials of Petroleum. London, UK: Frank Cass.  
Gately, D. (1992). "Imperfect **price** -reversibility of U.S. gasoline **demand**: Asymmetric responses to **price** increases and declines." The Energy Journal 13(4): 179-207.  
Granger, C.W.J. and...

49/3,K/2 (Item 2 from file: 148)  
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04920247 SUPPLIER NUMBER: 10356184 (USE FORMAT 7 OR 9 FOR FULL TEXT)  
**A search for economic and financial principles in the administration of United States countervailing duty law. (Symposium on Countervailing Duty Law)**  
Diamond, Richard  
Law and Policy in International Business, 21, n4, 507-607  
Fall, 1990  
ISSN: 0023-9208 LANGUAGE: ENGLISH RECORD TYPE: FULLTEXT  
WORD COUNT: 48133 LINE COUNT: 03795.

... intervention, market economies are characterized by flexible prices determined through the interaction of supply and **demand**. In response to these **prices**, resources flow to their most profitable and efficient use. To identify subsidies in this pure...The reference to the provision of goods and services suggests that Congress was aiming at **variable** inputs to **production**. The provision of such inputs by government at a price lower than the market price...then diminished with time. However, the effect of the subsidy on the foreign firm's **cost** of **production** would not be greater at first, and no reason would exist for front-loading the duties. A duty **calculated** according to the entitlement model and based on the change in the foreign firm's...was that a grant should be treated as a loan. Yearly payments would equal a **prorated** portion of the face **value** of the grant plus interest on all unpaid portions, but the formula was adjusted so...loan. However, in order to eliminate unevenness, ITA discounts the difference in loan payments and **prorates** the net present

value for the stream over the term of the loan. If the benefit is the difference...because the company has exported goods; consequently, it will be perceived as lessening the marginal **cost** of producing those **goods** even though the tax is paid directly by the company. Example (f) differs from (g...

...tax, the government allows the firm to reduce the base upon which direct taxes are **calculated**. Since the firm's ability to reduce its base is tied to exportation, the analysis...  
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S5	3097	S3 AND S3
S6	13	PRORAT? (5N) (VALUE? OR PARAMETER? OR VARIABLE?)
S7	3	S5 AND S6
S8	21362	REVENUE? OR PROFIT?
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S29	170	PRORAT? (5N) (VALUE? OR PRICE? OR VARIABLE? OR PARAMETER?)
S30	3	S28 AND S29
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S32	141208	DEMAND? (4N) (VARIABLE? OR PRICE? OR VALUE? OR PARAMETER?)
S33	121160	S31(S)S32
S34	121160	S33 AND S33
S35	197	PRORAT? (5N) (VALUE? OR PARAMETER? OR VARIABLE?)
S36	0	S35 AND S36
S37	7222004	REVENUE? OR PROFIT?
S38	2483557	TIME AND PRICE?
S39	0	S39 AND S38 AND S35
S40	0	S40 AND S36
S41	5313028	CALCULAT? OR ESTIMAT? OR OPTIMIZ? OR VALUED OR VALUING OR - PRICING
S42	1407981	(PRODUCT? OR ITEM? OR MERCHANDISE? OR GOODS) (5N) (PRICE? OR COST OR COSTS)
S43	144881	S41(S)S42
S44	172759	DEMAND? (5N) (VALUE? OR PRICE? OR VARIABLE? OR PARAMETER?)
S45	11538	S43 AND S44
S46	265635	(PRODUCT? OR ITEM? OR MERCHANDISE? OR GOODS) (5N) (COMPONENT? OR ELEMENT? OR VARIABLE? OR PARAMETER?)
S47	1004	S45 AND S46
S48	197	PRORAT? (5N) (VALUE? OR VARIABLE? OR PARAMETER?)
S49	2	S47 AND S48
S50	2898069	PRODUCT? OR ITEM? OR GOODS OR SERVICE? OR MERCHANDISE?
S51	2373311	VALUED OR VALUING OR ESTIMAT? OR OPTIMIZ? OR CALCULAT? OR - PRICE? OR PRICING
S52	10364	DEMAND? (4N) (VARIABLE? OR PRICE? OR VALUE? OR PARAMETER?)
S53	294126	S50(S)S51
S54	10364	S52 AND S52
S55	0	PRORAT? (5N) (VALUE? OR PARAMETER? OR VARIABLE?)
S56	0	S54 AND S55
S57	422195	REVENUE? OR PROFIT?
S58	32321	TIME AND PRICE?

S59	218	S58 AND S57 AND S54
S60	0	S59 AND S55
S61	2898069	PRODUCT? OR ITEM? OR GOODS OR SERVICE? OR MERCHANDISE?
S62	10364	DEMAND? (4N) (VARIABLE? OR PRICE? OR VALUE? OR PARAMETER?)
S63	3595	S61(S)S62
S64	3595	S63 AND S63
S65	0	PRORAT? (5N) (VALUE? OR PARAMETER? OR VARIABLE?)
S66	0	S65 AND S66
S67	422195	REVENUE? OR PROFIT?
S68	32321	TIME AND PRICE?
S69	0	S69 AND S68 AND S65
S70	0	S70 AND S66
S71	0	S72(S)S73
S72	0	S74 AND S52
S73	12345	DEMAND? (5N) (VALUE? OR PRICE? OR VARIABLE? OR PARAMETER?)
S74	0	S76 AND S74
S75	1	PRORAT? (5N) (VALUE? OR PRICE? OR VARIABLE? OR PARAMETER?)
S76	0	S77 AND S78
S77	10364	DEMAND? (4N) (VARIABLE? OR PRICE? OR VALUE? OR PARAMETER?)
S78	0	S80(S)S81
S79	0	S82 AND S82
S80	0	PRORAT? (5N) (VALUE? OR PARAMETER? OR VARIABLE?)
S81	0	S84 AND S85
S82	422195	REVENUE? OR PROFIT?
S83	32321	TIME AND PRICE?
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S93	0	S96 AND S97
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